Talking Points for Existing Oil and Gas FIP Discussion
March 23, 2016
Meeting in SLC with Governor Herbert and Industry

Stakeholder input:

- We appreciate all of the input provided to date on the development of a reservation specific FIP to address the AQ issue in the Uinta Basin and we are happy to listen to additional input today.

- EPA and the Ute Tribe co-hosted a meeting on April 14, 2015 with the oil and gas industry to discuss getting emission reductions on existing and new sources on the Reservation.

- Western Energy Alliance outlined what operators are currently doing to address oil and gas emission controls on the Reservation in their June 18, 2015 letter to Chairman Chapoose.

- Additionally, several companies have met with the EPA headquarters and regional office.

- Additionally, there will be a public comment process with this rulemaking, so you will have further opportunity for input once the rule is proposed.

Air Quality:

- Preliminary monitoring data for 2016 in the Uinta Basin is showing violations of the ozone NAAQS.

- Four monitors currently have preliminary design values for 2014-2016 in violation of the standard.

- During the February 2016 inversion, we saw 8 hour ozone values in the basin that were higher than any values recorded in Los Angeles in 2014 or 2015 (102 ppb, 107 ppb).

- National oil and gas rules will not address AQ issues in basin, but do give us the authority to develop an area specific rule if needed.

U&O FIP Overview:

- EPA is drafting a Reservation specific FIP for the U&O reservation that would reduce the VOC emissions from oil and gas sources.

- Purpose is twofold:
    - Address the degraded AQ in the basin and
    - To level the playing field in the basin with Utah's rules for existing oil and gas sources on state land.

- The draft U&O FIP would apply to existing facilities that have over 5 tons per year of VOC emissions from glycol dehydrators, storage tanks, and pneumatic pumps (this is the same threshold Utah uses).

- Existing facilities over the threshold would be required to install a flare or other control device designed with a 98% destruction efficiency for storage tanks, glycol dehydrators, and pneumatic pumps (consistent with Utah's air permit rules).

- Existing facilities would be required to retrofit flares with auto-igniters, use submerged-fill to load/unload oil from tanks/trucks, and replace high-bleed pneumatic controllers with low/no-bleed (consistent with Utah's rules for existing sources).

- The EPA estimates that for the Uinta Basin as a whole, the draft Reservation-specific FIP would result in an almost 40 percent reduction of VOC emissions from oil and gas facilities. This corresponds to a reduction of VOC emissions of 41,000 tons per year.

- A final FIP would allow time for industry to come into compliance with the requirements. [proposed 18 months after the effective date of a final rule.]

- The Tribe also provided a comment about interest in exploring the possibility of working toward a tribal plan to help protect air quality on the Reservation. We share that interest and wanted you to know that any FIP issued by EPA could be delegated to the Tribe to implement, once the Tribe has the capacity to implement such a program.

- We would like to finalize the reservation specific rule sometime after the national oil and gas rules are finalized in spring 2016.

Questions:

With new methane announcement, why not wait on reservation specific rule?

- Timing
    - New announcement if for an ICR, not a rulemaking.
    - Now that we understand AQ issues in the basin, we need to take action to improve the AQ.
    - National oil and gas rules will not address existing AQ issues in the basin.
    - Desire to get emission reductions in the basin as soon as possible and in advance of designations process.
- New announcement focuses on methane, U&O FIP would focus on VOC, we recognize there is some co-benefit, but not enough to improve AQ in basin.

With designations on the horizon, why not wait for that process?

- Reductions in advance of designations could help lower the non-attainment classification to Marginal.
    - Marginal has reduced CAA requirements compared to higher classifications, such as Moderate.
    - For a Marginal area, an attainment plan and modeling would not be required.
    - A Marginal area would need to be back into attainment in three years (2020) or it would be re-classified as a Moderate area.
    - Implementing the FIP to get VOC reductions sooner rather than later will help to make attainment by 2020 more likely, if the Uinta Basin is designated non-attainment.

- Enforceable restrictions in place for existing sources will help industry demonstrate that new proposed sources will not cause or contribute to exceedances of the ozone standard, allowing us to continue to permit new sources of emissions within the U&O Reservation.

Concerns regarding NA gap in the national rules?

- We are aware of the concern as discussed in the comments received on the national rules.
- We are working closely with HQ to address this concern.

Will the FIP allow for synthetic minors?

- We are aware of the concern as discussed in the comments received on the national rules.
- We are working closely with HQ to address this concern.

Tribal Resolution concerns:

- Continued development, no delays – FIP allows for this
- Streamlined permitting approach – we welcome streamlining too, FIP does this
- Cover synthetic minor sources, minor modifications at major sources and modifications at synthetic minor sources -
- Cover transition from attainment/unclassifiable to nonattainment – aware of concern and working closely with HQ to address.
- Consistent with surrounding jurisdictions – FIP is consistent with UDAQ requirements in basin.
- Cover new sources and certain targeted existing sources directly contributing to AQ degradation -

Background and Additional Information:

Rule comparison chart
Ozone table
Designations schedule
Designations categories

- In addition to those reductions, the EPA estimates that the proposed rule will result in the co-benefit reductions of about 8,700 tpy of hazardous air pollutants (benzene, toluene, xylene, etc.) and about 78,000 tpy of methane. EPA also estimates that over 1.8 billion cubic feet of gas per year would be returned to market. This is enough natural gas to meet the energy needs of more than 78,000 U.S. homes annually.

- Notes if needed:
  - Total gas conserved on Indian country from FIP/Total gas produced from Uinta Basin (WRAP-def'n) = 0.41%
  - 1.8 billion cubic feet of gas x 1.028 MMBTU/ 1 Mcf) x 1 Mcf/1000 cf x current Henry Hub Natural Gas Spot Price ($1.74/MMBTU –Very LOW) x 12.5% royalty = **$403k/year in royalty** … we have not done the analysis on Tribal minerals to say all of that would go to the Ute Tribe.

What would be the cost of compliance with the draft FIP?

- Using EPA's control cost estimates, the total annualized cost of implementing all of the controls outlined in the proposed FIP is estimated to be approximately $78 million or $1,800 dollar per ton of VOC reduced, which is considered by states and EPA to within the range of reasonable and cost effective.

  - Notes if needed:
    - Overall cost of CO Reg 7 is **$300/ton**
    - Overall cost of implementing NSPS OOOO nationally is **$1,400/ton**
    - **CTG cost varies, from** Pneumatic Controller - Replacing high bleed with low bleed pneumatics: **$210/ton to** Pneumatic Pumps – Routing to a New VRU: **$27,094/ton** for diaphragm pump, **$245,860/ton** for piston pump
    - The capital cost of the rule is estimated to be $357 million.

Do the cost estimates include savings to the operator?

- As mentioned earlier, many of the strategies and controls required by the draft FIP would benefit operators by reducing the amount of gas vented to the atmosphere. These savings are not included in the cost analysis, but would increase the cost effectiveness of the rule as owners and operators would gain revenue from the sale of the gas not vented to the atmosphere. The complete cost analysis by the EPA to support this draft FIP would be included in a Technical Support Document for this rule.

    - Notes if needed: EPA relied on existing cost analyses done in support of the 2015 proposed New Source Performance Standard (NSPS) OOOO revisions, 2015 proposed Control Technique Guidelines (CTGs) for existing sources in nonattainment areas, and the 2012 Colorado Regulation Number 7. To estimate the number of facilities and equipment that could be impacted by the proposed FIP, EPA relied on the existing minor source registration forms submitted by operators under the Federal Minor New Source Review (NSR) Program in Indian Country at 40 CFR Part 49 (Indian Country Minor NSR Program).

How does the schedule for the ozone standard that was revised in 2015 align with the draft FIP schedule and effective date?

- Initial recommendations for the 2015 ozone standard are due from states and tribes to EPA by October 1, 2016. States or tribes should base their recommendations on air quality data from the three most recent years of monitoring data available at that time, i.e., 2013 to 2015. However, states may also have preliminary information about 2016 monitoring data that could also help inform their recommendations. Based upon 2013-2015 monitoring data, the Uinta Basin would have a design values in the high 70s ppb, which would fall under the marginal nonattainment classification.
- Final ozone designations and classifications will be made by EPA in late 2017 based on the 2014-2016 monitoring data.
- We anticipate finalizing the draft FIP soon after the national oil and gas rulemakings proposed in September 2015 are finalized, which we expect will happen early summer 2016.
- We would propose providing 18 months for operators to retrofit their existing facilities, which allows for operators to distribute retrofits across that time for efficient resource management. We anticipate emission reductions beginning in late 2016 prior to the 2016/2017 winter ozone season. The requirements of the FIP will ultimately address the problem of degraded air quality in the Uinta Basin due to winter ozone.
- There are currently four monitors violating the ozone standard using 2014-2016 data. However, even though the Basin may likely be designated non-attainment for ozone in late 2017, efforts to lower VOC emissions through the FIP later in 2016 and 2017, may

help lower the non-attainment classification to Marginal. A classification of Marginal has reduced CAA requirements compared to higher classifications, such as Moderate. For a Marginal area, an attainment plan and modeling would not be required. A Marginal area would need to be back into attainment in three years (2020) or it would be re-classified as a Moderate area. Implementing the FIP to get VOC reductions sooner rather than later will help to make attainment by 2020 more likely, if the Uinta Basin is designated non-attainment.

Air Quality:
High ozone levels have been observed over the last few years at numerous air monitors (tribal and state) in the Uinta Basin during winter inversions (as high as 134 ppb in 2013 – AQI very unhealthy context) ~98% of all VOCs and ~60% of all NOx emissions released in Uinta Basin, which mix to form ozone, are from oil and gas sources – it is estimated that ~75% of those sources are on the Reservation. There are ~10,000 existing oil and gas wells producing in the basin without federally required emission control.

Ozone NAAQS:
- EPA revised the ozone NAAQS from 75 ppb to 70 ppb in October 2015.

- Since the ozone standard has been revised it starts a non-attainment area designation process.
    - States/tribes submit recommended designation to EPA by October 2016 and EPA will finalize the designations by October 2017. State and federal plans for bringing areas into attainment would be required in late 2020 for areas designated "moderate" non-attainment and 2021 for serious and higher areas.

- With the extended implementation wait times (past 2017) for attainment plans, EPA does not want to wait to address the Basin's serious ozone problem.

- As part of the Tribe's enrollment in EPA's Ozone Advance program, EPA has been working with the Tribe's Air Program providing technical assistance and capacity building through various research efforts.

- A Reservation-specific FIP could prepare the basin to receive a lower nonattainment ozone classification, fewer restrictions on future oil and gas development, and more flexibility in returning to attainment status.

What are the National Rules for Oil and Gas Sources?
- EPA does have a permit rule for new minor air pollution sources in Indian country; however, the effective date that is specific to oil and gas sources has been delayed until late Summer of 2016 as EPA works on a national strategy for controlling emissions from oil and gas.

- As part of EPA's strategy for oil and gas, a national rule for new oil and gas sources in Indian county was proposed in mid-September 2015.

- The proposed national rule, as written, will only cover new sources and require compliance

with other EPA oil and gas rules (such as the NSPS OOOO for oil and gas production sources). It will not have a requirement for reducing emissions from existing oil and gas sources.

- The proposed national rule will not require individual permits or a general permit for new oil and gas sources, so industry would not need to be concerned about delays in obtaining permits from EPA for new development.

- We have reviewed the comments the Ute Tribe submitted on the proposed national rule. We note that the Ute Tribe believes that the air quality issues in Uinta Basin are unique, and so, EPA should prepare a specific rule tailored for the Uintah and Ouray Reservation instead of just relying on a nationwide FIP.

- We know from reading the comments that the Tribe is aware that the proposed national rule mentions that EPA can do a Reservation-specific rule if the national rule is determined to not be adequate to address local air quality issues. An example would be a rule to reduce VOC emissions from existing oil and gas production sources on the U&O Reservation.

- We appreciate the support that the Tribe offers for a reservation specific rule, and appreciate the opportunity to continue to discuss our plan to develop such a rule.

Why Do We Want to Propose a U&O Reservation-Specific FIP?

- To reduce VOC emissions from existing oil and gas sources (these emissions can react in the air and form ozone).

- The draft FIP would be consistent with Utah's rules for existing oil and gas sources on state land and create a level playing field for industry. It would also be consistent with any requirements developed under EPA's national oil and gas rules.

- Currently there is a discrepancy between what is required for oil and gas sources on U&O Reservation and those required by Utah for controlling air emissions. Most emissions from existing oil and gas sources on the Reservation are currently not regulated by EPA.

- A Reservation-specific FIP could be implemented in advance of the 2017 ozone designations process, in time to achieve early reductions that could lead to lower winter ozone levels and improved air quality in the Basin. Ideally, with the help of a reservation specific rule to control VOC emissions from existing oil and gas facilities, ozone levels may be below EPA's revised standard so that the Basin does not need to be designated as non-attainment.

- EPA would have a public comment period and respond to comments before issuing a final rule.

Cost background/comparison

In preparation for our upcoming U&O FIP, EPA reviewed available control and cost information

for regulating the oil and gas sector. The most comprehensive analyses were done by Colorado for their Reg 7, and by EPA for the NSPS OOOO revision and CTGs. The Fort Berthold FIP had an extremely high cost effectiveness due to the very large amount of uncontrolled VOCs being emitted – less than $17/ton. Our FIP for U&O will likely have higher values. Below is a summary of $/ton of VOC controlled for different equipment from the Colorado Reg 7, OOOO RIA, and CTGs. The values generally assume a threshold of 6 tons per year and 95% control. The list is not comprehensive, but is intended to give a range of cost effectiveness values to inform our U&O FIP.

Note that for other states with O/G regulations, most didn't provide a cost analysis, or in the case of Utah, simply used Colorado's cost analysis. Texas provides estimated costs of reducing VOCs through various controls, but not a $/ton estimate.

Cost Analysis from CO Reg 7
Flares
- Condensate Tanks with Flares: **$716/ton**
- Produced Water Tanks with Flares: **$715/ton**
- Crude oil tanks with Flares: **$427/ton**
- First 90 days of controls with Flares: **$77/ton**

Storage Tank Emission Management Plan (STEM)
- Buffer Bottle: **$395/ton**
- High-low pressure (HLP) separator: **$443/ton**

LDAR (ongoing): **818$/ton**
Auto igniter: **$272/ton**
Replacing high bleed with low bleed pneumatics: N/A
Dehydrator control: **$632/ton**

Overall cost of CO Reg 7 is **$300/ton**

Cost Analysis from OOOO RIA
Oil Well Completions: **$1,100/ton**
Fugitive Emissions: **$1,400/ton**
Pneumatic Pumps: **$560/ton**
Compressors: **$5,600/ton**
Pneumatic Controllers: **$320/ton**

Overall cost of implementing NSPS OOOO nationally is **$1,400/ton** (not counting recovery savings)

Cost Analysis from CTG
VRU: **$1,189/ton to $14,858/ton** depending on number of tanks routed to VRU (not counting recovery savings)
Combustion: **$936/ton to $11,114/ton** depending on number of tanks routed to combustion device
Compressors – Rod Packing Replacement
- Gathering and Boosting: **$1,132/ton**

Processing: **$334/ton**
Compressor – Replacing with a Dry Seal Compressor: **$1,931/ton**
Compressor – New Combustion Device: **$6,292/ton**
Compressor – Existing Combustion Device: **$183/ton**
Pneumatic Controller - Replacing high bleed with low bleed pneumatics: **$210/ton**
Pneumatic Pumps – Routing to a New Combustion Device: **$23,944/ton** for diaphragm pump, **$218,017/ton** for piston pump
Pneumatic Pumps – Routing to an Existing Combustion Device: **$312/ton** for diaphragm pump, **$2,840/ton** for piston pump
Pneumatic Pumps – Routing to a New VRU: **$27,094/ton** for diaphragm pump, **$245,860/ton** for piston pump
Pneumatic Pumps – Routing to an Existing VRU: **$312/ton** for diaphragm pump, **$2,840/ton** for piston pump
Leaks – LDAR: **$1,160/ton** to **$20,192/ton** depending on test approach, frequency, and site